



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2013-0030; Directorate Identifier 2012-NE-42-AD; Amendment 39-17325; AD 2013-02-04]

RIN 2120-AA64

Airworthiness Directives; Rolls-Royce plc Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: We are adopting a new airworthiness directive (AD) for all Rolls-Royce plc RB211-Trent 970-84, RB211-Trent 970B-84, RB211-Trent 972-84, RB211-Trent 972B-84, RB211-Trent 977-84, RB211-Trent 977B-84 and RB211-Trent 980-84 turbofan engines. This AD requires on-wing inspections of low-pressure turbine (LPT) disk seal fins and interstage seals when post-flight review indicates Engine Health Monitoring (EHM) vibratory maintenance-alert limits were exceeded in flight. The AD also requires in-shop inspections of the LPT disk seal fins and interstage seals to detect cracks or damage and, depending on the findings, accomplishment of corrective action. This AD is prompted by a Trent 900 engine experiencing LPT stage 2 disk interstage seal material loss and increased low-pressure rotor vibration while in flight. We are issuing this AD to prevent cracks in the LPT disk, which could result in uncontained engine failure and damage to the airplane.

DATES: This AD becomes effective [Insert date 15 days after date of publication in the FEDERAL REGISTER].

We must receive comments on this AD by [Insert date 45 days after date of publication in the FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in the AD as of [Insert date 15 days after date of publication in the FEDERAL REGISTER].

ADDRESSES: You may send comments by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov> and follow the instructions for sending your comments electronically.
- Mail: U.S. Department of Transportation, 1200 New Jersey Avenue SE., West Building Ground Floor, Room W12-140, Washington, DC 20590-0001.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- Fax: (202) 493-2251.

For service information identified in this AD, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, England, DE248BJ; phone: 011-44-1332-242424; fax: 011-44-1332-245418, or email: http://www.rolls-royce.com/contact/civil_team.jsp. You may view this service information at the FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7125.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Operations office between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Operations office (phone: (800) 647-5527) is the same as the Mail address provided in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Robert Green, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803; phone: 781-238-7754; fax: 781-238-7199; email: robert.green@faa.gov.

SUPPLEMENTARY INFORMATION:

Discussion

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA Airworthiness Directive 2012-0220, dated October 22, 2012, a Mandatory Continuing Airworthiness Information (referred to after this as “the MCAI”), to correct an unsafe condition for the specified products. The MCAI states:

Following a revenue service flight, a Trent 900 engine experienced increased low-pressure vibration. The vibration did not exceed any engine limits, and the engine was not shut down during flight. Upon post-flight inspection of the engine, debris was found in the exhaust tail pipe and the engine was removed. The results of a subsequent strip inspection revealed that the stage 2 Low-Pressure Turbine (LPT) disc had suffered material loss from a portion of the

Interstage Seal (ISS) area of the disc, with impact damage to downstream LPT stages. All debris was contained within the engine casings.

Preliminary findings show that the ISS fin had rubbed into the stage 2 vane honeycomb seal, which overheated and cracked, finally resulting in releasing a portion of the ISS area of the disc.

This condition, if not detected and corrected, could lead to LPT stage 2 disc cracks, possibly resulting in an uncontained engine failure and subsequent damage to the aeroplane.

We are issuing this AD to prevent cracks in the LPT disks, which could result in uncontained engine failure and damage to the airplane. You may obtain further information by examining the MCAI in the AD docket.

Relevant Service Information

RR has issued Repeater Technical Variance 125060, Issue 1, dated July 27, 2012; Repeater Technical Variance 125658, Issue 2, dated August 14, 2012; Alert Non-Modification Service Bulletin (NMSB) RB.211-72-AH054, Initial issue, dated September 14, 2012; and Alert NMSB RB.211-72-AH054, Revision 1, dated November 5, 2012. The actions described in this service information are intended to correct the unsafe condition identified in the MCAI.

FAA's Determination and Requirements of this AD

This product has been approved by the United Kingdom and is approved for operation in the United States. Pursuant to our bilateral agreement with the European Community, they have notified us of the unsafe condition described in the MCAI and service information referenced above. We are issuing this AD because we evaluated all information provided by EASA and determined the unsafe condition exists and is likely to exist or develop on other products of the same type design. This AD requires on-wing

inspections of LPT disk seal fins and interstage seals when post-flight review of the EHM low-pressure rotor (N1) vibration data indicates maintenance-alert limits were exceeded in flight. The AD also requires in-shop inspections of the LPT disk seal fins and interstage seals to detect cracks or damage and, depending on the findings, the accomplishment of corrective action.

FAA's Determination of the Effective Date

No domestic operators use this product. Therefore, we find that notice and opportunity for prior public comment are unnecessary and that good cause exists for making this amendment effective in less than 30 days.

Comments Invited

This AD is a final rule that involves requirements affecting flight safety, and we did not precede it by notice and opportunity for public comment. We invite you to send any written relevant data, views, or arguments about this AD. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2013-0030; Directorate Identifier 2012-NE-42-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this AD. We will consider all comments received by the closing date and may amend this AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact with FAA personnel concerning this AD. Using the search function of the Web site, anyone can find and read the comments in any of our dockets, including, if provided, the name of the individual

who sent the comment (or signed the comment on behalf of an association, business, labor union, etc.). You may review the DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR 19477-78).

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this AD:

1. Is not a "significant regulatory action" under Executive Order 12866;

2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and

3. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

We prepared a regulatory evaluation of the estimated costs to comply with this AD and placed it in the AD docket.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new AD:

2013-02-04 **Rolls-Royce plc**: Amendment 39-17325; Docket No. FAA-2013-0030;

Directorate Identifier 2012-NE-42-AD.

(a) Effective Date

This airworthiness directive (AD) becomes effective [Insert date 15 days after date of publication in the FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to Rolls-Royce plc (RR) RB211-Trent 970-84, RB211-Trent 970B-84, RB211-Trent 972-84, RB211-Trent 972B-84, RB211-Trent 977-84, RB211-Trent 977B-84, and RB211-Trent 980-84 engines, all serial numbers.

(d) Reason

This AD was prompted by a Trent 900 engine experiencing low-pressure turbine (LPT) stage 2 disk interstage seal material loss and increased low-pressure rotor vibration while in flight. We are issuing this AD to prevent cracks in the LPT disk, which could result in uncontained engine failure and damage to the airplane.

(e) Actions and Compliance

Unless already done, do the following.

(1) After every flight after the effective date of this AD, review the Engine Health Monitoring (EHM) low-pressure rotor (N1) vibration data. If you find that the maximum and average vibrations exceed 0.7 inches/sec (ips) and 0.5 ips, respectively, then within 10 engine flight cycles, confirm that the vibration data was not the result of indicator error.

(2) If you cannot show that the vibration increase was caused by indicator error, inspect the LPT disk seal fins and interstage seals. Use RR Repeater Technical Variance 125060, Issue 1, dated July 27, 2012, to do the inspections.

(3) After the effective date of this AD, at each engine shop visit inspect the LPT disk seal fins and interstage seals. Use RR Alert Non-Modification Service Bulletin RB.211-72-AH054, Revision 1, dated November 5, 2012, or Initial Issue, dated September 14, 2012, to do the inspections.

(4) If, during the inspection required by paragraphs (e)(2) or (e)(3) of this AD, you find any cracks in the disk seal fins or that the interstage seals are missing seal material, replace the parts with hardware eligible for installation before returning the engine to service.

(f) Definitions

For the purposes of this AD, a shop visit is defined as whenever engine maintenance performed prior to reinstallation requires one of the following:

(1) Separation of a pair of major mating engine module flanges. However, separation of flanges solely for the purpose of shipment without subsequent internal maintenance is not a shop visit. Separation of the external gearbox engine mating flanges or removal of the external gearbox is also not classified as a shop visit.

(2) Removal of a disk, hub, or spool.

(g) Credit for Previous Actions

If you took corrective action before the effective date of this AD in accordance with RR Repeater Technical Variance 125658, Issue 2, dated August 14, 2012, for detected excessive vibration, you met the inspection requirements of this AD.

(h) Alternative Methods of Compliance (AMOCs)

The Manager, Engine Certification Office, may approve AMOCs for this AD. Use the procedures found in 14 CFR 39.19 to make your request.

(i) Related Information

(1) For more information about this AD, contact Robert Green, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New

England Executive Park, Burlington, MA 01803; phone: 781-238-7754; fax: 781-238-7199; email: robert.green@faa.gov.

(2) Refer to MCAI European Aviation Safety Agency AD 2012-0220, dated October 22, 2012.

(j) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Rolls-Royce plc (RR) Non-Modification Service Bulletin (NMSB) RB.211-72-AH054, Initial Issue, dated September 14, 2012.

(ii) RR NMSB RB.211-72-AH054, Revision 1, dated November 5, 2012.

(iii) RR Repeater Technical Variance 125060, Issue 1, dated July 27, 2012.

(3) For service information identified in this AD, contact Rolls-Royce plc, Corporate Communications, P.O. Box 31, Derby, England, DE248BJ; phone: 011-44-1332-242424; fax: 011-44-1332-245418, or email: http://www.rolls-royce.com/contact/civil_team.jsp.

(4) You may view this service information at FAA, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7125.

(5) You may view this service information at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA,

call 202-741-6030, or go to: <http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Burlington, Massachusetts, on January 15, 2013.

Thomas A. Boudreau,
Acting Manager, Engine & Propeller Directorate,
Aircraft Certification Service.

[FR Doc. 2013-01361 Filed 01/29/2013 at 8:45 am; Publication Date: 01/30/2013]